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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/688,933	10/21/2003	Hisayoshi Daichou	Q78075	3174

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EXAMINER	
LE, KHANH H	

ART UNIT	PAPER NUMBER
2875	

DATE MAILED: 12/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/688,933	DAICHOU ET AL.	
	Examiner	Art Unit	
	Khanh H. Le	2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 May 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

Page 4, line 8, "MBC" should be changed to –BMC–.

Page 6, line 16, "14B" should be change to –14–.

Page 7, line 14, –22– should be added after the word "layer."

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burnell-Jones (US Patent No. 6,599,444) in view of Anderson et al. (US Patent No. 6,030,673).

4. With respect to claim 1, Burnell-Jones teaches that a bulk molding compound can be used to make a substrate for a lamp reflector (Col. 38, lines 42) by an injection molding process (Col. 38, line 14). The bulk molding compound comprising a matrix

resin mainly comprising an unsaturated polyester resin (Col. 10, line 3), glass fiber (Col. 16, lines 59) as an inorganic filler, and hollow glass spheres (Col. 18, lines 45-46) as additional inorganic filler. Burnell-Jones does not teach the mixture percentage by volume of the hollow glass sphere to the bulk molding compound.

Anderson teaches that hollow glass sphere use in injection molding can help to control the specific heat, the density, the strength, and the texture of the final molded articles (Col. 7, lines 55-58), i.e. light fixtures (Col. 15, line 55). The hollow glass spheres (Col 36, lines 1-3) can be added to the bulk molding compound in a range from about 25 to about 55% by volume based on the bulk molding compound (Col. 36, lines 31-37) to reduce the cost of making an article (Col. 7, line 26). Most of this range falls within the claimed range.

It would have been obvious to one having ordinary skill in the art, at the time the invention was made, to add the hollow glass spheres to the Burnell-Jones' bulk molding compound in the ratio between 10% and 40%, as taught by Anderson, to help to reduce the cost to produce Burnell-Jones' reflector, and at the same time, increases the strength, the texture, the weight, and the ability to withstand high temperature.

5. With respect to claim 2, Burnell-Jones does not teach the claimed ratio between the inorganic filler and the matrix resin.

Anderson teaches that the hollow glass spheres be present as ~~from~~ about 25% to 55% by volume (Col. 36, line 37), and glass fiber content (Col. 37, lines 13-15) be

from about 5% to 20% by volume (Col. 38, line 20). Therefore, the total inorganic filler content is about 30% to 75%, well within the claimed limitation of the present invention.

It would have been obvious to one having ordinary skill in the art, at the time the invention was made, to use the amounts taught by Anderson, to make the bulk molding compound for producing Burnell-Jones' reflector. ~~By~~ Having more hollow glass spheres than glass fiber in the bulk molding compound will significantly reduce the weight of the reflector and increase the ability to withstand the high temperature.

6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Burnell-Jones (US Patent No. 6,599,444) and Anderson et al. (US Patent No. 6,030,673) as applied to claim 1 above, and further in view of Laroche (US Patent No. 5,438,763).

7. With respect to claim 3, Burnell-Jones discloses that the hollow glass spheres used in the mixture of bulk molding compounds often have the diameter less than 200μm, and the size that is most often used in plastics is less than 44μm (Col. 18, lines 29-34), but does not teach the presently claimed size range.

Laroche teaches that molded plastics material generally desire hollow glass spheres to have the median diameter between 20 and 50μm, and for example, 44μm was used because the effect of the presence of the hollow glass spheres has on the flow properties of the bulk molding compound during the molding process (Col. 4, lines 40-46). Furthermore, Laroche teaches that reflectors can be made from a resin

compound having glass spheres of median diameter 44μm (Col. 9, lines 63-Col. 10, lines 20).

It would have been obvious to one having ordinary skill in the art, at the time the invention was made, to use hollow glass spheres that have a diameter in the range between 20 and 50μm, as taught by Burnell-Jones and Laroche, in the bulk molding compound for making the lamp reflector so that the hollow glass spheres will help the flow of the bulk molding compound during the molding process.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Alford (US Patent No. 3,316,139) discloses percent by volume for glass fiber, hollow glass spheres, and resin. Maeda (US Patent No. 6,756,427) discloses the amount of hollow glass spheres by weight in ration to resin.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh H. Le whose telephone number is (571) 272-8325. The examiner can normally be reached on Monday - Friday, 8:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Renee Luebke can be reached on (571) 272-2009. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Khanh H. Le
Examiner
Art Unit 2875

KHL

HENEE LUEBKE
PRIMARY EXAMINER